



Crunchant, A. S., Egerer, M., Loos, A., Burghardt, T., Zuberbühler, K., Corogenes, K., Leinert, V., Kulik, L., & Kühl, H. S. (2017). Automated face detection for occurrence and occupancy estimation in chimpanzees. *American Journal of Primatology*, 79(3), [e22627].
<https://doi.org/10.1002/ajp.22627>

Peer reviewed version

Link to published version (if available):
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Table I. Number of videos and the percentage of chimpanzee videos where chimpanzee faces were or were not in frontal view of camera, and number of individual chimpanzees in videos for each site.

		Videos	Individual chimpanzees
<i>Budongo</i>	Frontal face views	110 (18%)	119
	No frontal face views	515 (82%)	757
	Total	625	876
<i>Sapo</i>	Frontal face views	148 (53%)	216
	No frontal face views	131 (47%)	397
	Total	279	613

Table II. Results of the last level of assessment (step 4) of the face detection software: automated analysis detected a majority of videos where chimpanzees were present as found by the manual analysis. Recall is the proportion of detections by the software in relation to the total number of detectable events ($TP/(TP+FN)$) and false alarm rate is the proportion of false detections ($FP/(FP+TN)$).

		Confirmed by manual analyses	
		Recall	False alarm
<i>Budongo</i>	Automated analyses	85/110 (77%)	187/6623 (2.8%)
<i>Sapo</i>		66/148 (45%)	74/8848 (0.8%)

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Figure Legends

Figure 1. Examples of snapshots from camera trap videos. TP indicate detectability by the face detection software, FN indicate non-detection. 1) A-E: true positives from Budongo; 2) F-J: false negatives from Budongo; 3) K-O: true positives from Sapo; 4) P-T false negatives from Sapo.

Figure 2. Screenshots of face detection software ‘FaceDetect’ interface. True detections: (A) true positive (TP), (B) true negative (TN); false detections: (C) false negative (FN), (D) false positive (FP).

Figure 3. Location of the two Pan African Programme study sites in Liberia (Sapo) and Uganda (Budongo) and their respective research grids. Cameras were placed opportunistically throughout grids at both sites.

Figure 4. Software detection results for all videos at each of the four processing steps for Budongo data set (A) and Sapo data set (B). FN, false negative; FP, false positive; TN, true negative; TP, true positive.

Figure 5. Time required to detect a chimpanzee on “x” number of cameras for Budongo data set (A) and Sapo data set (B).

Figure 6. Occupancy probability (Ψ) derived from false positive and false negative cleaning simulations and transformed by the ‘plogis’ function (Budongo (A) and Sapo (B)). Grey lines represent the SE obtained by the ‘plogis’ function. Green points represent the non-cleaned dataset, the red points represent the manual dataset (fully cleaned dataset) and the blue points represent an optimum level of cleaning.

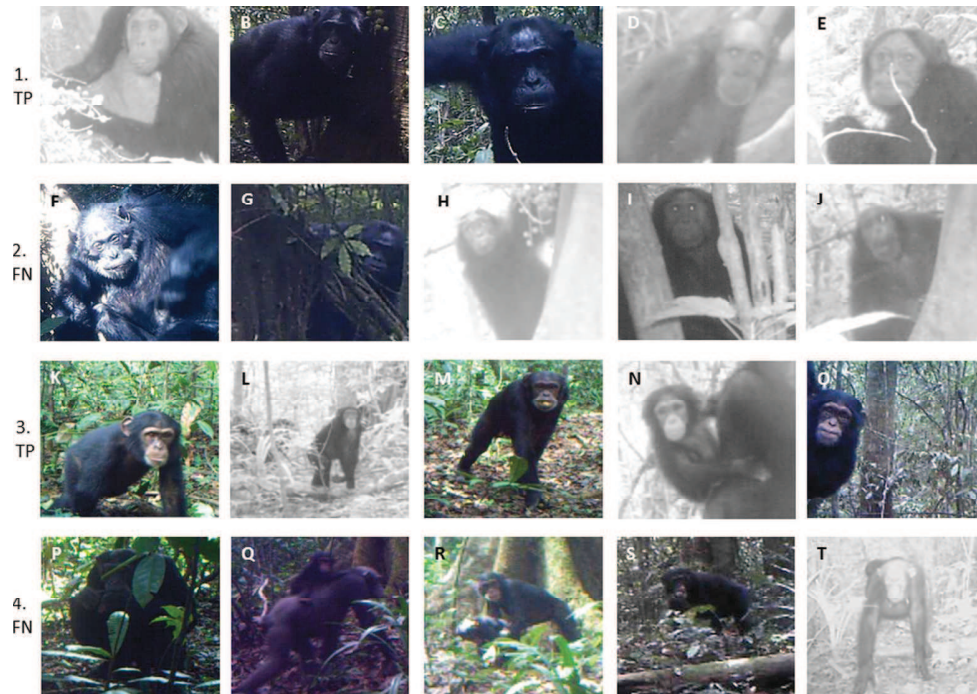


Figure 1. Examples of snapshots from camera trap videos. TP indicate detectability by the face detection software, FN indicate non-detection. 1) A-E: true positives from Budongo; 2) F-J: false negatives from Budongo; 3) K-O: true positives from Sapo; 4) P-T false negatives from Sapo.

Fig. 1

127x89mm (300 x 300 DPI)

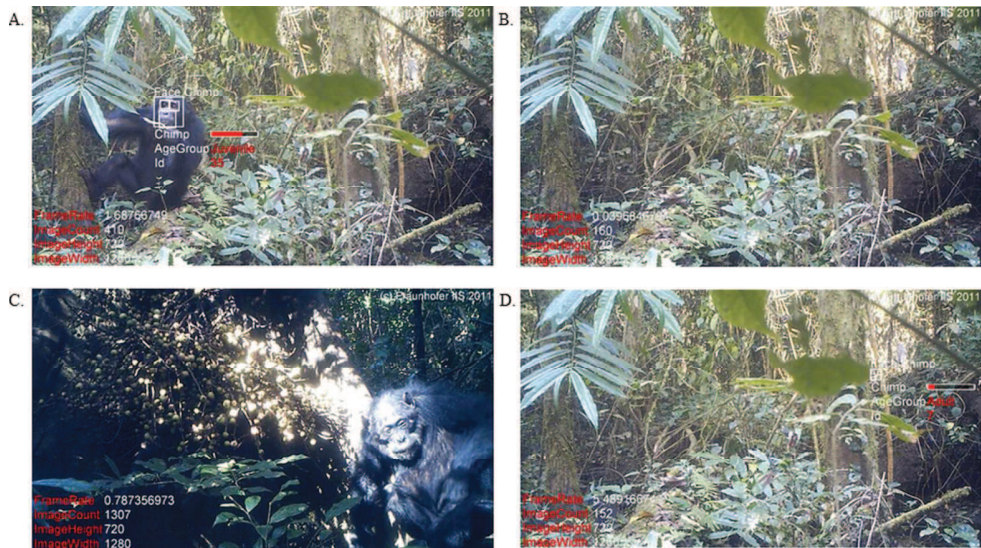


Figure 2. Screenshots of face detection software 'FaceDetect' interface. True detections: (A) true positive (TP), (B) true negative (TN); false detections: (C) false negative (FN), (D) false positive (FP).

Fig. 2

127x70mm (300 x 300 DPI)

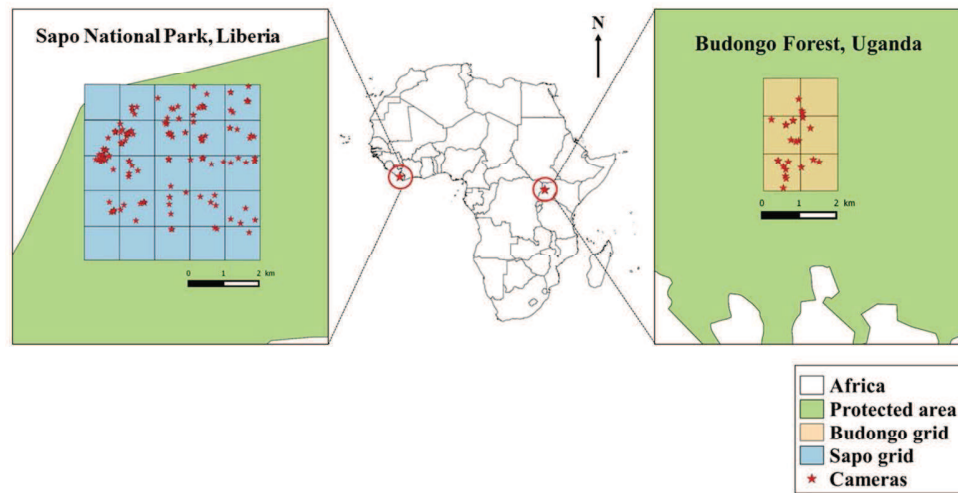


Figure 3. Location of the two Pan African Programme study sites in Liberia (Sapo) and Uganda (Budongo) and their respective research grids. Cameras were placed opportunistically throughout grids at both sites.

Fig. 3

108x60mm (300 x 300 DPI)

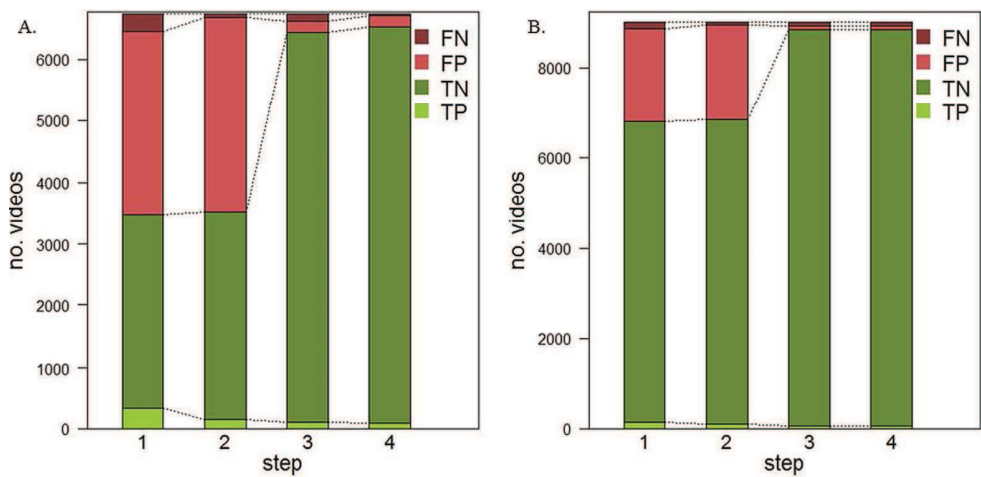


Figure 4. Software detection results for all videos at each of the four processing steps for Budongo data set (A) and Sapo data set (B). FN, false negative; FP, false positive; TN, true negative; TP, true positive.

Fig. 4

127x61mm (300 x 300 DPI)

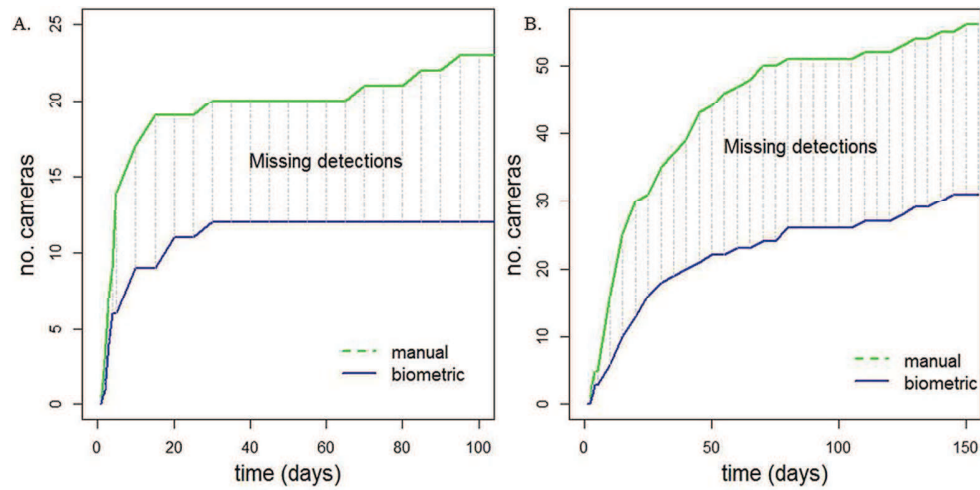


Figure 5. Time required to detect a chimpanzee on "x" number of cameras for Budongo data set (A) and Sapo data set (B).

Fig. 5

127x63mm (300 x 300 DPI)